

### BSSB PULSE SHIFT SCENARIOS

Beam Destination	BSSB S#	Description (25 Total)	Beam Permits																Beam Switches								Necessary (& Rlted) Events					Notes
			LU	LD	NTF	MTA	BO	L3	BDS	MB	MI	RR	MU	P1	P2	SW	NM	MS	L	MTA	B	MB	R	MU	MI	SW	NM					
400 MeV Dump	L1	Linac 400 MeV Studies	1	1	0	x	x	x	x	x	x	x	x	x	x	x	x	1	1	x	x	x	x	x	x	x	x	11 0A	Linac Studies - non-HEP Pulse Shift			
MTA	L2	MTA 400 MeV Studies	1	1	0	1	x	x	x	x	x	x	x	x	x	x	x	1	x	1	x	x	x	x	x	x	x	11 03 04	MTA Linac Studies - non-HEP Pulse Shift			
		Booster Scenarios																														
Booster Dump	B1	Booster Studies	1	1	0	x	1	x	x	x	x	x	x	x	x	x	x	1	x	x	1	x	x	x	x	x	x	17	Beam to Booster Dump.			
Booster Dump	B2	Booster Studies	1	1	0	x	1	1	0	x	x	x	x	x	x	x	x	1	x	x	1	x	x	x	x	x	x	13+14+15+16+19+1C+1D	Beam to Booster Dump.			
MB TGT	B3	Protons B->MB	1	1	0	x	1	0	1	1	x	x	x	x	x	x	x	1	x	x	x	1	x	x	x	x	x	x	1D BF	Beam to MiniBooNE		
		RR Scenarios																														
RR ABT	R1	Recycler Studies (\$E0)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	1	x	x	x	x	x	x	E0 13+15+19+1C BE	Recycler study beam to RR Abort		
RR ABT	R2	Recycler Tuneup (\$E1)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	1	x	x	x	x	x	x	E1 15 BE /DE	Recycler Tuneup to RR Abort for \$29 & \$2B Study Beam		
RR ABT	R3	Recycler Tuneup (\$E2)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	1	x	x	x	x	x	x	E2 13 BE /DE	Recycler Tuneup to RR Abort for \$20 & \$21 Beam		
RR ABT	R4	Recycler Tuneup (\$E3)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	1	x	x	x	x	x	x	E3 19 BE /DE	Recycler Tuneup to RR Abort for \$2A Beam		
RR ABT	R5	Recycler Tuneup (\$E9)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	1	x	x	x	x	x	x	E9 1C BE /93	Recycler Tuneup to RR Abort for 8 GeV Beam to Muon		
		MI Scenarios																														
MI ABT	M1	MI \$21 Cycle w/o RR tuneup	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	21 13+15 /E2 /30 BF	MI Tuneup to MI Abort for \$21 Beam without Recycler			
MI ABT	M2	MI \$20 Cycle w/o RR tuneup	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	20 13+15 /E2 /32 BF	MI Tuneup to MI Abort for \$20 Beam without Recycler			
MI ABT	M3	MI \$23 Cycle tuneup	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	23 19+15 /A5 BF	MI Tuneup to MI Abort for \$23 Beam			
MI ABT	M4	MI \$2A Cycle tuneup	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	(2A) 19+15 E3 BE DE /A5	MI Tuneup to MI Abort for \$2A Beam			
MI ABT	M5	MI \$2D Studies	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	2D 13+14+15+16+19+1C BF /E9 /93	MI Studies to MI Abort			
MI ABT	M6	MI \$29 Studies with RR	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	(29) 13+15+19+1C E1 BE DE	MI Studies to MI Abort with Recycler			
MI ABT	M6a	MI \$29 Studies w/o RR	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	29 13+14+15+16+19+1C BF /E1 /80	MI Studies to MI Abort			
MI ABT	M7	MI \$2B Studies with RR	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	(2B) 13+15+19+1C E1 BE DE	MI Studies to MI Abort			
MI ABT	M7a	MI \$2B Studies w/o RR	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	2B 13+15+19+1C BF /E1	MI Studies to MI Abort			
MI ABT	M8	MI \$2E Studies	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	2E 13+14+15+16+19+1C BF	MI Studies to MI Abort			
MI ABT	M9	MI \$21 Cycle with RR tuneup	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	(21) 13+15 E2 BE DE /30	MI Tuneup to MI Abort for \$21 Beam with Recycler			
MI ABT	M10	MI \$20 Cycle with RR tuneup	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	(20) 13+15 E2 BE DE /32	MI Tuneup to MI Abort for \$20 Beam with Recycler			
		Muon Scenarios																														
Muon	MN1	8 GeV Protons to Muon via RR	1	1	0	x	1	0	1	x	x	1	1	1	1	x	x	1	x	x	x	x	x	1	x	x	x	x	E9 1C 93 BE	8 GeV Protons to Muon via Recycler		
Muon	MN2	8 GeV Protons to Muon via MI	1	1	0	x	1	0	1	x	1	x	1	1	1	x	x	1	x	x	x	x	x	1	x	x	x	x	2D 1C 93 BF	8 GeV Protons to Muon via MI		
Muon	MN3	120 GeV Protons to Muon	1	1	0	x	1	0	1	x	1	x	1	1	1	x	x	1	x	x	x	x	x	1	x	x	x	x	29 14 80 BF /E1	MI Ramped Protons to Muon		
		NuMI/NOvA Scenarios																														
NuMI TGT	N1	NuMI/NOvA Protons with RR	1	1	0	x	1	0	1	x	1	1	x	x	x	x	x	1	1	x	x	x	x	x	x	x	x	x	(2A) 19 A5 E3 BE DE	NOvA		
NuMI TGT	N2	NuMI/NOvA Protons w/o RR	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	1	x	x	x	x	x	x	x	x	x	23 19 A5 BF	NUMI		
		SWYD Scenarios																														
SWYD	S1	SWYD Protons with Long Flattop w/o RR	1	1	0	x	1	0	1	x	1	x	x	x	1	1	1	1	x	1	x	x	x	x	x	x	x	x	21 13 30 BF /E2	120GeV FT - Long Flattop without RR		
SWYD	S2	SWYD Protons with Short Flattop w/o RR	1	1	0	x	1	0	1	x	1	x	x	x	1	1	1	1	x	1	x	x	x	x	x	x	x	x	20 13 32 BF /E2	120GeV FT - Short Flattop without RR		
SWYD	S3	SWYD Protons with Long Flattop with RR	1	1	0	x	1	0	1	x	1	1	x	x	x	x	x	1	x	x	x	x	x	x	x	x	x	(21) 13 30 E2 BE DE	120GeV FT - Long Flattop with RR			
SWYD	S4	SWYD Protons with Short Flattop with RR	1	1	0	x	1	0	1	x	1	1	x																			